No 3 Book
Dec 2 1826
350 Arch Market

#11

Inaugural dissertation

on

The congestive form of Fever.

Submitted to the Faculty

Passed March 6th. 1827
W. L. H.

of

The University of Pennsylvania,

for

The degree of Doctor of Medicine;

by

George Feild
Virginia.

On
Congestive Fever.

In studying the mechanism of the human frame, we are at once struck with the grandeur, minuteness and perfect adjustment of its parts, and the regularity and harmony with which it performs its functions in a healthy state; and are thereby naturally led to reflect and inquire how easily those organs, so minutely constructed, may be deranged, and their functions subverted by the application of any morbic agent, together with exciting cause.

The disease, or form of disease which is to be the subject of my essay, is that of the congestive type; and I shall commence with a short inquiry into its cause and pathology. This disease being generally a form of our bilious fevers, (for they may be said to be divided into the simple inflammatory and congestive,)

I shall of course refer it to the same causes, such as dampness, heat, alternating with cold acting as exciting, and miasmata cause.

When the system is under morbid action from the impression of some noxious agent, it may take on either of the above mentioned forms of disease; if the agent alluded to be sparing and mild it will be of the simple form, if more active and in larger quantities, of the inflammatory and thus if neglected or improperly treated will assume the congestive, by far the most dangerous and difficult to manage; of which I shall say more when I come to the treatment.

The remedies of this disease being that of our bilious Intermittents, has been generally supposed act on the system either through the medium of the stomach, skin or lungs; but I am induced to believe that the stomach is the organ on which miasmata make their primary impression and secondarily on the vascular system, which I shall endeavour to show when I come to treat of the pathology.

The i
general
ent of vac
system
part co
ter) and
must p
ated by
n infect
If for th
bad th
set, is
stitutes e
Wh
ate obst
transpiration
ft which
pears to
pear a
hout e

The stomach being so universally connected with the general system by sympathy, in a functional point of view, one of the most important organs in the system; and being that in which, on dissections, we most commonly find a greater degree of inflammation and other morbid appearances than any other, in most febrile affections; more particularly those excited by aerial poisons or the specific effluvia from an infectious disease:— it is reasonable at once to suppose that this of the three media which we have allowed the remote cause of the disease in question to act, is that one through which it most frequently institutes its morbid action.

When we consider that persons living a miasmatic district are constantly inhaling the surrounding atmosphere and consequently the mephitic exhalations with which, at some seasons, it is impregnated, it appears to me that a sufficient quantity of this noxious vapour would be inhaled to bring on disease at once almost without failure, but we have known instances

the embra
same some
of affected
does not
Ob
st of the
ction pr
it may
stomach
In th
organ (
th taken
organ
omach is
ches off is
ness. A
stomach
ate from
nate,
gonity

to the contrary: that persons would have to be subjected to miasm some considerable period before they will be morbidly affected; which seems satisfactorily to prove that it does not act primarily on the lungs.

On the contrary the tardiness in the development of its effects, (miasma) and frequently a total exemption from them though the system may be exposed to it; may in a measure be accounted for if we admit the stomach to be the primary seat of action.

In the first place, the miasm being conveyed to this organ (the stomach) entangled with the saliva it must be taken in in smaller quantities than if inhaled, & consequently be slowly accumulated; and secondly if the stomach is not in a fit situation to be acted on it passes off unnoticed and unfelt commingled with the feces. It appears from the observations I have made that the stomach should be in a state of emptiness or else irritable from crude ingesta, to be morbidly affected by miasmata, for hence persons have been exposed to it with impunity by previously taking into the stomach some

[illegible] which seems to act as a very [illegible] during the day. In some parts we can [illegible] a [illegible] of [illegible] to [illegible] in [illegible] and [illegible], [illegible] [illegible], especially, [illegible] [illegible] about [illegible] in [illegible], in the same way as [illegible]. Similarly we [illegible] the [illegible] [illegible], that [illegible] it may not act merely as a [illegible], [illegible] early in the morning [illegible] [illegible] [illegible] the most favourable time for the deposition of moisture from the evaporation of the dew in the [illegible] of the [illegible] sun, it may [illegible] [illegible] composed of the [illegible] particles of the atmosphere [illegible] by the [illegible] of the preceding night.

[illegible] in the preceding pages given the causes [illegible] [illegible] attempting to establish the [illegible] as the primary seat of action, I will now [illegible] [illegible] of the [illegible] just [illegible] into the capacities of the circulatory system.

By the term circulation we mean that process by which the blood is carried from the heart

to all parts of the body, and returned again to its source; and in performing which circuit it is conveyed through two distinct sets of vessels the arteries and veins the former carrying it from the heart to the extremities and the latter bringing it from all parts of the body to the heart whence it started.

The results of blood in the minor system seems not to be certainly known, though it is generally supposed to be about twenty-eight pounds, of which say, half is contained in the veins and the remaining portion in the arteries. This disproportion in the distribution of the sanguineous fluid, the increased caliber and the decreased or sparing if any entrance of the veins, in consequence the diminished velocity with which the contained fluid is propelled the nearer they approach the heart, are circumstances which will serve to explain and elucidate the Pathology of venous congestion which I shall now attempt to describe, having premised a brief description of the anatomical and physiological arrangement of the circulatory system; as it is alone from Anatomy and Physiology, or an knowledge of the

functions of the body in a healthy state that we are to mark and account for the changes that are manifested when they are changed, and thus the Pathology of any disease.

In acknowledgment to what I have said, I shall proceed by saying that the miasm, or malaria poison, is conveyed to the stomach, by being swallowed, and here, as I have been stated constitutes its primary action, by exciting the nervous coat of this organ; and which action is transmitted to the hard and arteries through the medium of sympathy or nervous communication; and of course the action or there is stimulant and if not so powerful will in the disease the inflammatory type and if it is so respondency and typhoid in stimulant action will not be apparent as the simplous hypothesis will be completely merged in those of congestion.

Dr Armstrong in his able work on typhus fever has described two modifications of congestion viz, the regular or that in which the symptoms of congestion are present without the doubtful appearance of excitement, which I have

just described; and the irregular, or that in which the typical congestions are not to such an extent, or the cause so oppressive as not to admit of a partial reaction, bearing the aspect of inflammatory rather than congestive fever. — But to return to the Pathology.

The blood is thrown in motion by the systole of the heart, and by which it is driven through the arterial system, being kept in motion by the inherent property of contractility in these vessels: they discharge it into the capillary vessels which are thought by some Physiologists to be a separate & distinct set, intermediate between the arteries and veins and by others to be the minute ramifications of the arteries terminating in the veins. Thus here the impulse given to the blood in the heart is spent, but owing to the contractility of the arteries increasing the farther they proceed from the heart, and in proportion to their diminished calibre, the circulation is continued by an oscillatory motion peculiar to these vessels.

And this brings us to the venous circulation, which is much more languid than the arterial, owing to the

cause which I have mentioned above of the sparing contractility, or resisting power in these vessels.

Hence we see they are naturally predisposed or liable to take on congestion, more especially if there is a torpor or inability in them to fulfil their duty on the surface coexistant with a morbid excitement or oppression at the heart and large arteries. And if from this torpor a partial congestion of any of the viscera should take place, it will of course increase in a direct ratio with the morbid excitement of the heart, till it become so potent a barrier to the vis a tergo in propelling the blood, that finally there is established a confirmed congestion of either the brain, carrying the patient off in a low muttering delirium resembling Apoplexy; or the Liver producing an intumescence and uneasiness about the region of that viscera; or of the intestines producing pain, restlessness, discharge of bloody stools &c. — But congestion to this part may probably be more easily overcome than perhaps any other, as the quantity of blood contained is not so great & therefore the circulation may be more easily equalised;

or the determination may be to the lungs ending in difficult breathing, oppression &c; or to the spleen attended with the general symptoms of disease in that viscus, or some affecting one organ that may be predisposed by idiosyncrasy or habit in the person affected; or such the pathology of congestive fever.

But the disease may be compounded with more or less debility, and frequently a certain and undeviating line of distinction cannot be easily drawn between them, but I will lay down the symptoms which are generally received as diagnostic. In the first place we should inquire into the history of the case; if the patient, from a full habit and in high health, should be taken with sudden and unusual lassitude and giddiness, with a slow, labouring and oppressed pulse, we may be sure the debility which he labours under is from oppression, or congestion, and not real or general, as this would be gradually brought on from emaciation of the body or exhaustion of vital power from some depleting cause and the pulse would not be weak, would be free from that struggling noise which so usual is the oppressed pulse.

It may also be asked in what the form differs from inflammation fever? the distinction has in most cases plain and easily marked; in the one the pulse is small, weak, quick and easily compressed in the other full, quick, hard and incompressible; in the convective form there is a total absence of heat, the surface cool and clammy, in the inflammatory, external heat is particularly manifest, the skin hot and dry, the face in most cases highly flushed.

Symptoms — an attack of congestive fever is generally ushered in or made manifest by the following symptoms. A full heavy sensation approaching to unfigeneous stupor seems to take possession of the brain, giving to the patient the appearance of inebriation; the eye is dull, heavy, and watery, with an inanimate expression, and for the most part suffused with a reddish hue, the features shrunk; face pale and flaccid with a countenance expressive of anxiety; the skin over the whole surface is soft & a clingy appearance, moistened in almost all cases with a cold clammy sweat, having partially lost its sensibili-

ity to rubefacients; the extremities are considerably relaxed and weakened, in fact cases have been related in which the prostration was so great from the sudden comatose state produced that the patients have absolutely fallen when perhaps about their daily occupation, where they would lie if not assisted till a partial reaction took place in the system: the stomach is generally irritable; the tongue though at first not much altered, in the course of the disease, if it should be of any duration, becomes covered with a darkish coloured fur.

Treatment — The Pathology and symptoms which I have laid down of the disease now in question, will I hope lead to a plain, correct and decisive treatment.

The mode of practice pursued in the treatment of this disease must be firm and decided; for such is the nature of it, that when once established, if the Physician is not possessed of the requisite confidence and discrimination, his patient, to his great surprise and mortification, may slip through his fingers before he is aware of the danger, at least until so late that with all his skill in the application of the reme-

dies which his profession affords he will be compelled to be a useless spectator to the death of his patient whom he might possibly have saved if he had known that the disease was of the nature it proved to be at too late a period.

Thus we see the obscure and insidious character of this disease; and the great point of difficulty is, as I have before said, to distinguish between apparent weakness, or debility from oppression, and real or that from abstraction; upon which distinction alone depends a correct practice.

For, the two states of the system being diametrically opposite, the remedial agents also, of course are adapted each to its respective symptoms; and those which would cure in the one case, would almost certainly kill in the other. For instance let us suppose we were called to a patient labouring under the symptoms of congestive fever which I have described and were to mistake it for one of real debility, and were of course to exhibit stimuli to sustain life every dose adding to the evil which is thus far too powerful for the vital energy present, till finally the system, sinking "suo pondere," kills the patient

into an interminable cam a i. We should perhaps, from reflecting on the symptoms and termination, be convinced of our error — but too late.

In pursuing my subject I shall enumerate the remedies which have been most generally used and attended with the greatest success in our district of country, when this form of disease has been quite prevalent within the last two or three years. And I shall take into consideration first that of <u>Blood-letting</u>.

This seems to be a hazardous remedy, with some, I fear, in mentioning the state of fever in which it should be forbidden says, "that it should not be resorted to in that state of fever in which there is a general congestion of the viscera," and in we partly agree with our illustrious author, but must beg him to differ from him in proscribing it altogether, for when timely resorted to, that is, in the onset of the disease or before the universal collapse comes on, and judiciously used, I believe it is certainly one of the most appropriate and certain equalizers of the circulation we can have recourse to, but which is by no means

to be abused, or if we carry it too far the object we have in view is defeated, as the remedy will tend rather to increase the venous congestion which we aim to remove, by too suddenly weakening the heart and arteries and thereby disabling them to diffuse the blood.

This remedy may be prescribed either general as I'd or topical as cupping and leeches the latter should be applied on the part congested, or near it, as to the temples, back of the neck and perhaps the whole head if the brain is threatened, or over the right hypochondriac region if the liver is affected &c. Arteriotomy may also be resorted to, but this operation is seldom performed I believe unless there is apprehension of serious consequences from sudden effusion of the brain.

Should the universal collapse come on before we see the patient, we should use stimulants, or opium combined with calomel, of which Dr Armstrong speaks very highly.—

As there is in almost every form of bronchitis stage of partial collapse, we have to distinguish between the partial collapse and the universal or complete one, which may gen-

rally, be done if not before, after the flowing of a little blood from the vein, which at the same time satisfies us as to the correctness or incorrectness of the remedy: for, if after opening the vein and the evacuation of a small quantity blood, we find the pulse become fuller, freer, and softer, we may be satisfied that the collapse or debility is apparent and that blood letting is the proper remedy. But if on the contrary, after the abstraction of blood the pulse become slower, smaller, and weaker, we must immediately abandon the remedy as being inapplicable and dangerous.

In the treatment of this form of fever, the chief indication is to equalise the circulation, or restore its balance, and change the disease into one of excitement or inflammatory character to be managed by depleting remedies. The remedy of which I have been speaking, is generally a depleting one but it seems better to call it in this place an equalise, if not indeed a stimulant, as the circulation, if it labour under congestion, must be first equalised before it can be said to be under actual depletion.

The next remedy or set of remedies which I shall con

sider is that of Purgatives. They bear no inconsiderable part in the treatment of this fever. Blood-letting having been in most cases premised, we should resort without delay to the most active and certain purgatives, and calomel seems to be particularly adapted to this case on account of its having if required the two-fold effect of speedily opening the bowels, and of salivation.

I say in most cases alone, because I would not be understood to mean that blood-letting is to be indiscriminately used in the commencement of all attacks of congestive fever, for in many cases the oppression may be so overpowering, and the debility so great, that we are compelled to resort to stimulants or cordials and perhaps to stimulants and purgatives combined.

The bowels in this disease being generally locked and inactive require larger doses and more frequently repeated than in common cases, as they should be kept up a regular and steady discharge from the bowels for the purpose of depleting the system and restoring a more healthy secretion. The purgatives which have been most general

-ly used with us, are those which are commonly of a drastic nature, either singly or combined, as Calomel and Jalap, Gamboge, Aloes &c, but the former of these given in small and successive doses until the system is under its specific effect, is an excellent remedy when it has failed with a view to its purgative effect, and there still remains a visceral derangement of the system, and if the stage of excitement is not manifest from the bleeding, and purgative effects of the medicines above mentioned, we shall now see it happily developed along with, and perhaps merged in, the mercurial excitement, and then we may be said to have removed, strictly speaking, the congestive character of the disease. and converted it into one of inflammatory type to be managed by a general antiphlogistic treatment.

Blisters are frequently of service in congestion applied over the part supposed to be congested, as also are sinapisms and other rubefacients which are used to determine to the surface. After the system has been evacuated by bleeding and purging there may still be

tardy re
consequ
viously
ich may
dies to
ured, b
the defl
ule and
Armstr
t an En
is unle
fluids
alising

a tardy restoration of the balance of the circulation in consequence of the heart and arteries having been previously in a partially inactive or oppressed state, which may require the exhibition of stimulant remedies to encourage their reaction, or as I have before observed, this treatment may probably be alternated with depleting remedies, the Carbonas Ammoniae in small and frequent doses is a favourite remedy of Dr Armstrong to meet this indication — and might not an emetic be serviceable in producing this reaction, as it is well known to have the effect of determining the fluids to the surface and thereby would aid in equalising the circulation.